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VI. *Pharmacologia seu Manuduētio ad Materiam Medicam in qua Medicamenta Officinalia Simplicia, hoc est Mineralia, Vegetabilia, Animalia eorūque partes, in Medicina Officinis usitata, in Methodum naturalem digesta succinctè & accurate describuntur, cum notis generum Characteristicis, Specierum Synonymis, differentiis & viribus. Opus omnibus Medicis, Philosophis, Pharmacopœis, Chirurgis, & Pharmacopolis utilissimum.* A Samuele Dale.

THE use of the *Materia Medica* seems to be as old as Mankind, whose Infirmities springing up early, call'd for Remedies, which Instinct or Necessity first dictated, afterwards Observation and Experiment improv'd. The *Egyptians* inscrib'd their Medicines on Pillars in the High-ways, and on the Walls of their Temples in great Cities, for the publick Instruction and Preservation of the People. The *Greeks* taking their Rudiments from them, cultivated the *Medicinal Art*, which by the peculiar Fertility of their *Genius* was rais'd to such a Perfection, that succeeding Ages being not able to continue its growth, suffered it to degenerate. The *Romans* (tho' extreamly civiliz'd) thought it Honour enough to Transcribe, or Epitomize the *Greeks*; *Scribonius Largus*, *Celsus*, and *Pliny* were only *Copists*. *Hippocrates*, *Aristotle*, *Theophrastus*, *Dioscorides*, &c. *Originals*; which *Galen* afterwards did indeed refine upon, but the *Latines* invented little or nothing. The *Arabians*, tho' very Luxurious in Fancy and Imagination,

corrupted the *Greek Purity* ; so that the *Materia Medica* lay in great Disorder and Obscurity, till the Navigation to both *Indies* was detected and opened ; then the *Spaniards* and *Portugueses* began to describe the Physical Drugs bought up by the Merchants, but their Histories are very lame and imperfect, and consequently *Schroder*, who compos'd out of them : Since his time many *Officinals* have been fully illustrated in Print, and in Manuscripts, both by the *Dutch* and *English*, out of which the Ingenious Author has compil'd the present Work in a most Natural, most Easie, and Perspicuous Method, being assisted by some learned Friends ; so that very little (except a few Uses) is taken from *Schroder* (as will appear by comparing them) the Body and Frame being altogether different, and the Discoveries of a later date ; the whole Piece therefore may be justly esteem'd new, and consequently very Useful, being the Result of many Voyages and Iteneraries to the Remote Parts of the World, and the Effect of many Admirable Observations daily made in the *Indian Colonies*.

The many Impostures and Cheats which the Dealers in *Drugs* and Physical *Herbs* do daily commit, gave occasion to our Author of Publishing this small Tract, in which, after having given an Explication of divers of the Terms of Art used among *Mineralogists*, *Botanists*, and *Zoologists*, and a short Description of most of the *Utensils* of the *Apothecary's* and *Chymist's* Shops, he doth premise something in General concerning the Collection, Duration, Time, Manner, and Place of Preserving *Simples*, together with their Vertues, Uses, and Chymical *Analysis*, with a short Account of the General Division or Method of the Book.

These being premised, our Author proceeds to the Work it self, which he divideth into four Books : The first of which Treats of *Minerals*, and contains six *Sections*. The first concerning *Waters*, which are either
Simple

Simple or Mineral. Secondly, *Earths*, and they are of four sorts, *Boles*, *Clays*, *Marles*, and *Chalks*. The Third Section is of *Sulphurs*, *Arſnicks*, and *Bitumens*. The Fourth treats of *Salts*, as *Sal communis*, *Sal Gemmæ*, *Nitrum*, *Alumen*, *Borax*, and *Vitriolum*. The Fifth contains *Metallick Fossils*, which are divided either into *Oars*, as the *Cinnabaris*, *Hæmatitis*, &c. or *Bastard Metals*, as *Antimonium*; or *Perfect Metals*, as *Argentum*, *Plumbum*, *Cuprum*, &c. The Sixth and last Section is of *Stones*, which are either such as are not Precious, as *Lapis Calaminaris*, *Hybernicus*, &c. Or Precious, and they are either Opake or Diaphanous, which are generally called *Gems*.

The Second Book treats of *Plants*, and is divided into three *Classes*; the first of which is of such Plants as are of a stony Substance, as *Corallium* and *Corallina*.

The Second Class is of *Herbs*, and is divided into 25 Sections, in which our Author for the most part following the Method of that most Ingenious Botanist, the Learned and Judicious Mr. *John Ray*, in his Excellent *Historia Plantarum*, of which a large Account as to its Divisions, &c. having already been published in these *Transactions*, N^o. 186. pag. 283. I shall in this place say no more, but shall refer the Curious thither.

The Third and last Class of this Second Book is of *Trees* and *Shrubs*, and contains 11 Sections. The first of which is of such Trees as have a single stem without any Branches, and produce but one Bud, as the *Palma*. Then our Author proceeds to such Trees and Shrubs as are branched, or have Boughs and Twigs; and in the second Section treats of such as have their Fruit disjunct from their Flower, and they are either *Nuciferous*, as the *Juglans*, and *Corylus*: Or *Glandiferous*, as the *Castanea*, *Quercus*, &c. Or *Coniferous*, as the *Abies*, *Sabina*, &c. Or *Bacciferous*, as the *Juniperus*.

Or Lastly, *Lanigerous*, as the *Populus* and *Salix*. After these he comes to treat of such Trees and Shrubs as have their Flower and Fruit contiguous. And in the Third Section, of such Trees and Shrubs whose Flower and Fruit are *Aggregate*, as the *Ficus*, *Morus*, *Piper Longum*, and *Liquid Amber*. The Fourth Section contains such Trees and Shrubs as have an *Umbilicated* Fruit : that is, such whose Flower stands upon the top of the Fruit, the *Calyx* whereof makes a sort of *Umbell*; and they are either *Pomiferous*, as the *Malus*, *Pyrus*, *Granatus*, &c. or *Bacciferous*, as the *Ribes*, *Myrtus*, *Caryophyllus*, *Cortex Winteranus*, &c. He then proceeds to such Trees and Shrubs as have their Flower at the bottom of the Fruit. And in the Fifth Section comprehends such which have the *Calyx* of their Flower *non deciduous*, in which the Fruit standeth as in a Cup, and these he calls *Calyculated* Fruits ; as the *Sebestena*, *Agnus Castus*, *Sassafras*, *Cinnamomum*, *Camphora*, *Styrax*, and *Canella alba*. These being dispatch'd, our Author comes to treat of such Trees and Shrubs which have their Flowers and the *Calyx's* thereof *deciduous* together. And in the Sixth Section begins with the *Pruniferous*, that is, such as have a large Fruit covered with a tender Skin, containing one large stone within a Juicy Pulp, especially when ripe, as the *Prunus*, *Cerasus*, &c. The Seventh Section comprehends the *Bacciferous* Trees and Shrubs, that is, such whose smaller Fruit doth contain in a Pulpy Juice one, two, three, four, or many Seeds : Those with but one Seed or Stone, are the *Balsamum*, *Terebinthus*, *Cububæ*, *Coculus Judus*, &c. Those with two Seeds are *Jasminum*, *Ligustrum*, *Berberis*, &c. With three Seeds the *Sambucus*. With four, the *Vitis*, *Thea*, *Agrifolium*, &c. Lastly, with many Seeds, the *Rubus*, &c. The Eighth Section contains the *Pomiferous* Trees and Shrubs, and these are all *Polypyrene*, and they are either such as have a fleshy and tender Rind or Peel, as the

the *Aurantia*, *Citrus*, *Cambogium*, &c. Or such as have their Pulp contained in a hard shell, as the *Nux Vomica* and *Cacao*. The Ninth Section treats of such Trees and Shrubs whose Fruit when ripe is dry, as the *Laurus*, *Coffee*, *Piper rotundum*, *Guajacum*, *Ulmus*, *Fraxinus*, &c. The Tenth Section comprehends the *Siliquose* Trees and Shrubs, and they are either such as have a *Uniform* Flower, as *Senna*, *Glans Unguentaria*, *Cassia Fistula*, *Tamarindus*, &c. or such as have a *difform* or *Papilionaceous* Flower, as the *Genista*, *Acacia*, *Caroba*, *Brasilia*, &c. The Eleventh and last Section of this Book is of some parts of Plants which are of use in the *Shops*, which because for want of a good Account thereof they could not be reduced to the foregoing Method, are therefore ranged either as *Roots*, as the *Rhodium*, or *Barks*, as the *Cortex Thuris*; or *Woods*, as *Lignum Aloes*, &c. Or, lastly, *Gums*, as the *Olibanum*, *Bdellium*, and *Canca-mum*.

The Third Book contains *Animals*, which by our Author is divided into two *Classes*, and in the first treats of *Exanguious Animals*, which are divided into two Sections, in the first of which he comprehends *Insects*, which are either *Apoda*, as the *Sanguisuga* and *Lumbricous Terrestris*, or *Pedata*, which are either *Non Alata*, as the *Pediculus*, *Ricinus*, *Scorpio*, *Millepedes*, &c. or *Alata*, and they are either *Anelytra*, as the *Musca*, *Apes*, *Formica*, *Cicada*, *Bombix*, &c. or *Coleoptera*, which are either *Scarabæi*, as *Cantharides*, *Cochinilia*, &c. or the *Cicindela*; or lastly, the *Proscarabæus*. The Second Section contains the greater *Exanguious Animals*, which are either *Mollia*, as the *Sepia*; or *Testacea*, which are either *Univalvia*, as the *Dentalium* and *Entalium*; or *Turbinata*, as the *Cochlea*, *Blatta Byzantina*, *Buccinum*, and *Purpura*; or *Bivalvia*, as the *Ostreum*, *Mater Per-larum*, *Unguis Odoratus*, &c. Or, lastly, *Crustacea*, as the *Astacus fluviatilis*, *Cancer Marinus*, &c.

The

The Second Class is of *Sanguineous Animals*, and is divided into Four Sections; and in the first our Author treats of *Fishes*, and begins with such as are *Anguilliform*, or which have slender smooth Bodies without *Scales*, or at least very small ones, as the *Anguilla*, *Mustela*, and *Lupus Marinus*: He then descends to such as have a more contracted Body, and those are either *Marine*, having but one *Fin* on their backs, whose *Rays* are not *Aculeate*, as the *Harengus*, *Encrasicolus*, *Sturio*, and *Ichthyocolla*. Secondly, such as are *Fluviatile* with but one *non aculeate Fin* on their backs, having *Teeth* in their Mouths, as the *Lucius*. Thirdly, *Fluviatile Fishes* as aforesaid, but without *Teeth*, as the *Cyprinus*, *Tinca*, and *Barbus*. Fourthly, *Fishes* which have two *non aculeate Fins* on their backs, as the *Thymallus* and *Trutta*. Fifthly, such as have two *Fins* on their backs *aculeate*, as the *Perca* and *Mugil*. Sixthly, *Cartilagineous Fishes*, as the *Galeus acanthias*. Seventhly, and lastly, *Cetaceous Fishes*, as the *Monoceros*, *Orca*, and *Balaena*.

The Second Section contains *Birds*, and they are either *Aquatick* or *Terrestrial*; the *Aquatick* are of two sorts, First, *Fissipedes*, as the *Grus*, *Ardea*, and *Ciconia*. Secondly, *Palmides*, as the *Cygnus*, *Anser*, and *Anas*. The *Terrestrial* are either *Majores* or *Minores*. The *Minores* are again divided according to their Bills, into, First, such as have *Long-Bills*, as the *Ispida*. Secondly, such as have slender or soft *Beaks* or Bills, as the *Alauda*, *Hirundo*, *Passer troglodytes*, &c. Thirdly, such as have hard *Beaks* or Bills, as the *Passer vulgaris*. The *Majores* are likewise divided into three sorts: As First, such as have thick, strong, and longish Bills, as the *Corvus*, *Pica*, &c. Secondly, such as have shorter and lesser Bills, as the *Gallinaceous* and *Columbaceous* kinds. And lastly, into those which have crooked *Beaks* or Bills, as the *Aquila*, *Fultur*, &c.

In the Third Section is comprehended the *Serpentine* kind, and they are either *Apoda*, as the *Serpens* and *Vipera*; or *Pedata*, which are either *Caudata*, as the *Lacertas*, *Scincus*, &c. or *non caudata*, as the *Rana* and *Bufo*.

The Fourth and Last Section is of *Quadrupedes*, which are divided into *Ungulata* and *Unguiculata*. The *Ungulata* are of three sorts (*viz.*) First, *Solidungula*, as the *Equus*, *Asinus*, &c. Secondly, *Bifulca*, which are either *Ruminantia*, as the *Bovinum* genus, *Ovis*, and the *Caprinum* and *Cervinum* genera: Or *Non Ruminantia*, as the *Porcus* and *Aper*. Or Lastly, *Quadrifulca*, as the *Rhinoceros* and *Animal Moschiferum*. The *Unguiculate* are the *Elephas*, *Equus Marinus*, *Lepus*, *Castor*, *Ursus*, *Animal Zibethicum*, &c.

The Fourth and last Book is the *Anthropologia*, in which the Parts of a *Humane* Body which are of use in the *Shops* are enumerated; and these are divided into two *Sections*, and in the first are contained those which are taken from a *Living Body*. And Secondly, such as are taken from a *Dead Body*.

And Lastly, is added a small *Appendix* of some very few things omitted in the Work.

Having run over the General *Method* and *Division* of the Work, I shall descend to the particular Method thereof, which is this: At the beginning of each Book you have a General *Scheme*, or *Philosophick Table* of all the Heads or Sections in that Book: Likewise at the beginning of each subsequent Section you have a particular *Scheme* of all the Heads in that Section. Each Section doth likewise contain so many Chapters as there are distinct Heads: In each of which *Chapters* you have,

have, first, the *Characteristick* Note, whereby it may be distinguished from others, which are chiefly taken from the Extant Works of that great and learned Enquirer into Nature, Mr. *John Ray*. Secondly, you have the Names of each thing in *Latine* and *English*, not only how it's called in the *Shops*, but by the latest and most *Classick* Authors. Thirdly, you have the Place where each thing is Naturally to be found, and in the *Herbs* the time of flourishing. Fourthly, you have an Account of what parts of each are used in the *Shops*, with short, but pertinent *Descriptions* thereof. And Fifthly, you have a *Compendious* Account of their *Vertues* and *Physical* Uses, which are chiefly excerpted from the learned *Schroder*. After which you have frequently many Useful and Curious *Observations*, some few of which I shall briefly present you with according to the Order of the *Books*, and for the rest refer you to the Work it self.

In the First Book, treating of *Earths*, our Author takes notice of Nine sorts of sealed *Earths*, which he hath observed to be sold by the Drugists of *London*, under the Title of *Terra Sigillata*, and doth not doubt but many more may be found among them. Among *Sulphurs* he observes, that if *Orpiment* be the Natural Oar of *Gold*, as some affirm, then that *Metal* cannot have those *Alexipharmick* and *Cardial* Vertues that are ascribed to it by Authors. *Amber* and *Amber-grise* he takes to be *Mineral* Juices, and therefore rangeth them among *Bitumens*. Among the *Salts*, he observes that our Modern *Nitre* is a *Fossil* Salt, differing from the *Nitre* of the *Ancients*; and that *Vitriol* is not properly a *Salt*, but a *CrySTALLIZED Metal*. And concerning *Stones*, especially *Gems*, he doth believe that there are many things affirmed concerning them by Authors,

which

which are either Fabulous, Doubtful, or at least Superstitious.

In the Second Book he takes notice that the true *Rubarb* is not a *Dock*, but the Root of a Plant with a *Pentapetalous* Flower; and that the *Rhabarbarum* of *Alpinus*, which in our Gardens is called *Rubarb*, is the true *Rupontick*, which ought to be used in the *Shops* instead of the Root of a *Centaurium Majus*, which is frequently sold for it. Concerning the *Been album* & *rubrum*, he enumerates the many Controversies among Authors. both Ancient and Modern, and the Root of what Plant each would have it to be; and concludes, that if the *Papaver Spumeum* is not the *Been album*, and the *Limonium* the *Been rubrum*, which by reason of the imperfect Descriptions of the *Arabians*, he dares not aver, yet may they not improperly be used as their *Succedaneums*. *Contra-yerva* is the Root of a *Pomiferous* Herb; as are *China* and *Sarsaparilla* of *Bacciferous*: *Jalapium*, *Mecchoacanana* and *Turpetium* are the Roots of divers Species of *Convolvuli*: *Opium* he proves to be the Concret Spontaneous Juice of a *Poppy*. He excellently proves the *Anomum verum* to be a sort of *Cardamomum*, as is also the *Malegneta*, or *Grana Paradisi*: Unto which Tribe also belongs the *Curcuma*, *Costus*, *Galanga*, *Zedoaria*, *Zerumbeth*, and *Zinziber*. *Nardus Indica* he makes the Root of a *Cyperus*.

Among Trees and Shrubs he demonstrates *Terra Japonica* not to be an *Earth*, but the condensed Juice of the Fruit of the *Faufel*; *Balsamum è Toly* the *Resine* of an *American Pine*. *Cocculus Indus*, and *Nux Vomica*, are, the one of a *Bacciferous*, and the other of a *Pomiferous Asafoetida*: *Benxoin*, *Cambogium*, *Caranna*, and *Tacamabaca*, &c. by what Trees they are produced. The *Cortex Winteranus* he proves not to be the *Canella Alba* which is sold for it in the *Shops*, but the Bark of another Tree with an *Umbilicated* Fruit growing in *Magellan*. *Manna*

and *Gum Lacca* he clearly shews to be Spontaneous *Exudations*; the first of the *Fraxinus*, and the other of the *Fujuba Indica*, and that by many undeniable Arguments.

In the Third Book he shews you what the *Cochinella* is, with many excellent Observations thereon. The *Blatta Byzantina* he proves to be an *Operculum* of a *Turbinated* Shell-fish, different from the *Unguis Odoratus* of *Dioscorides*, which he takes to be a sort of *Cerchylum* or *Bivalve*. *Pearls* he affirms to be only the Diseases of *Bivalve* Shell-fish, and therefore doth not think them endued with those excellent *Vertues* ascribed to them by most Authors. He clears up what the *Dentalium*, *Entalium*, *Purpura*, &c. are. Among *Fishes*, he Observes that the *Lapides Bufonites* are the *Teeth* of the *Lupus Marinus*; and that the *Unicorn's Horn* of the *Shops* is not the Horn of a *Quadrupede* like a Horse, as some feign, but the *Tooth* of a *Fish* of the *Cetaceous kind*; he reckons up the many Opinions about *Sperma Ceti*, and affirms it to be an *Unctuous Matter* to be found in the Brain of a sort of *Whale*, and solves the Reason of its being found floating upon the Sea, as well as in its Natural place. In the Section of *Quadrupedes* our Author well observes the *Bezoar* to be a Stone, generated, or rather encrusted about divers things in the *Ventracles* or *Stomacks* of *Animals*, and is of divers sorts; as *Oriental*, found in a sort of *Goat*, the *Occidental* in an *American Deer*, and the *German* in a sort of *Goat*. Concerning the *Rhinoceros*, he is of Opinion, that he is the only *Unicorn* to be found among *Quadrupedes*, and perhaps may be the true *Unicorn* of the Ancients, whose Horn *Ælianus* affirms to be black, which Conjecture *Andreas Baccius* doth confirm. *Musk* he takes to be an *Excrementitious Blood*, secreted in its proper *Cystis* near the *Navil* of a *Quadrifid Animal* like a *Deer*. *Civet* he

he affirms to be an *Excrementitious Succus*, by Nature secreted in its proper *Follicule* near the *Anus* of an *Animal* of the *Dog-kind*, and not the *Sperm*, as some have asserted. *Caster* he proves to be the *Scent-bags* adjoyn-
ing to the *Intestinum Rectum*, and not the *Testicles* of the *Beaver*, as some assert.

In the Fourth and last Book our Author takes notice, that the *Sal Armoniac* of the Shops is a factious *Salt* made of *Human Urine*, *Soot*, and *common Salt*, and is not that of the *Ancients*, which *Pliny* and others affirm to be found among the Sands of *Lybia*. And lastly, Observes that *Mumia* is of four sorts; all which he doth demonstrate. And here I shall finish my Account, recommending to those which desire further Satisfaction in the *Materia Medica* the Book it self, which is of excellent Use to all *Physicians*, *Philosophers*, *Apothecaries*, *Chirurgions*, and *Druggsters*.

Advertisements.

THE Reader is desired to Correct a Mistake in *Philosophical Transactions*, Numb. 202. p. 824. The *Truffles* there mentioned being discovered at *Rushton* in *Northampton-shire*, by the Learned Physician Dr. *Hatton* of *Harborough* in *Leicester-shire*.

Libri quidam novi qui prostant apud S. Smith, & B. Walford, ad insignia Principis in Cœmiterio D. Pauli, Acta Eruditorum ab Anno 1682. ad 1692. inclusive cum tredecim Supplementis.

Indices Generales Actorum & Rerum primi Actorum Eruditorum quæ Lipsiæ publicantur Decenniis nec non Supplementorum Tomi primi.